Contributions on the Therapeutics of Carbolic acid, and more especially its uses in Parasitic diseases of the skin and mucous membranes; together with observations on it's uses in diphtheria.

With the development of state medicine and antiseptic surgery the demand for the manufacture of carbolic acid, may be said to have considerably increased, Prepared as it is now from coal tar, we may classify this substance as now found in commerce under three forms.

I Crystallized Carbolic acid.

II Liquid ——— " ——— " ———

III Powders of ——— " ——— " ———

Crystallized carbolic acid is slightly soluable in water in the proportion of about five per cent. If exposed to the action of the air it liquefies, and passes off slowly into the air, and is probably useful as an air purifier, If one part of the acid is mixed with two parts of ether it evaporates much quicker. The exact mode in which carbolic acid acts as an air purifier is uncertain. Trautman & Sansom maintain that it limits the lower forms of aerial life from growth and development. When in quantity it will coagulate albumen, and from this it has been inferred that it thus retracts putrefaction.

The Liquid Carbolic acid, is the acid of commerce in a more or less impure form, dissolved in water, or in water alcohol and cresylic acid, Dr Parkes in his manual of hygene estimates that the various liquids contain from ten to ninety per cents of phenol. It varies in colour from dark brown to an almost colourless solution.

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The principal Carbolic acid powders are Mc Dougalls and Coharts. The former powder is said to be a combination of Carbolate of Lime, Sulphite of Magnesia and water, while the latter is a combination of Carbolic acid, alumina, and silica.

Ringer

It has been maintained for Carbolic acid that it posesses antiputrescent and antifermentative properties; that it destroys the lowest forms of Animal and vegetable life. It is also affirmed that it acts as a stimulent and escharotic. While we for our own part feel inclind to coincide with these dicta, we would even venture to add, that it also is endowed with the property of anaesthesia if applied topically and in sufficient strenghth.

Gamdo malticed

Its powers of preventing fermentation is well exemplified in commerce when it holds a not unimportant place in the manufacture of the so called non-alcoholic wines; In some of these wines, I have advised the manufacturer to add a few grains of pure Carbolic acid to a little of the wine previous to sealing it in bottles, and in those cases where it has been done I have since learned that it has kept admirably.

The antiputrescent property of Carbolic acid seems now to be a fact pretty well recognised, for besides holding a most important position among our deodorisers and disinfectants it has been one of the principal agents used in revolutionizing the old system of treating wounds, and has aided considerably in developing and perfecting antiseptic surgery. Though more recently Boracic acid &c has bidden fair to rival, if not to outrun Carbolic acid in this important system of surgery, we can scarcely entertain the idea that an agent which has played so important a role in therapentics will be allowed to drop lightly aside.

There are few men, who have better opportunities for comparing the results of antiseptic and non antiseptic surgery than the general practitioner, as from the accidents incidental to his avocation he is often compelled to adopt both methods of treatment; for in many surgical emergencies time will not allow him to wait the arrival of the armamentaria requisite for the proper carrying out of antiseptic surgery, and recourse is had to the simpler form of water dressing and frequently bathing the part with the same liquid. Now able experimenters and amongst these Bartain, has endeavoured to show that there is perhaps no vehicle so likely to convey putrefactive matter or germs to wounded parts as water, and this more especially if the parts are thoroughly exposed to the action of it. Experience must have taught most of us that

that suppuration has often sprung up in a wound which previous to the application of water to it was kindly healing, and we have seen the same wound again under the influence of antiseptic treatment cease its suppurative tendency and take on healing action. Perhaps it is in contused and lacerated wounds that this may be easiest demonstrated. The following is a summary of such cases which have occured in my practice. The patients in whom they occured were for the most part labourers or tradesmen in Ship building Yards. The parts injured were for the most part the digits of the upper and lower extremities. The number of cases treated was about twenty. Of these eight were cases of injuries of the digits of the upper extremities, and the remaining twelve were of the lower. In two cases the thumb were injured alone, and in five cases the great toe was the part implicated. The method usually adopted by the workmen here, is, if any one of them in wounded to wrap the wounded part up with wash dressing, so that most of these cases came under my care in this state. In all of these cases where a day had elapsed previous to my seeing them, they gave forth a fetid smell, and in many suppuration was present. In some of these cases I have continued the water dressing on one digit, while I treated one or more of the injured fingers or toes antiseptically, and the result was almost invariably that those treated antiseptically with carbolic acid dressing soon ceased their suppurative tendency, the fetid smell disappeared the granulations were red acuminated firm and healthy, the wound healed much sooner, the pain in the injured part was much less, than in those treated with the water dressing, in which latter there was often present a fetid smell, requiring them to be much oftener changed and the granulations instead of being small and acuminated were frequently exuberant.

While, as we previously mentioned, it was maintained for Carbolic acid that it was endowed with the property of destroying the lowest forms of animal and vegetable life, it has also been asserted and demonstrated by experiment, that under some conditions it at least fails, to perform this office of life destroyer. For while it arrests the growth of fungi it will not completely destroy them. To prove this let me quote from the works of the late Dr. Parkes where that able author after enunciating the inability of Carbolic acid to destroy the lowest forms of life, maintains his position by following experiment, "I put he says some fresh faecal matter, free from urine in a bottle, and drew

Manual of Practical Hygiene by Edmund A. Parkes 4 Ed. 1873 Page 131

drew air washed in strong Sulphuric acid over it, fungi appeared rapidly on the faecal matter. I then passed air impregnated with Carbolic acid over the fungi; they became discoloured brownish, and apparently died; but on again substituting washed air they revived. The rapid distruction, and the as rapid recovery and regrowth, could be repeated many times, and showed that the Carbolic acid air had withered without actually killing the fungi".

While we seek not to gainsay this able experiment we would venture to hope that the powers of Carbolic acid in stamping out the lowest forms of life is after all not so futile. It has appeared to us that there many diseases of the human body of a parasitic nature; in which the lowest forms of life play a most important part, and it has also seemed to us that Carbolic acid presented an agent well suited for putting a period to their existence. Now if we entirely concur with the above statement these parasitic diseases Favus, Thrus, Ringworm &c. must be self limiting, or else in those cases of these diseases, which I have treated with Carbolic acid their growth, has like the fungi in the above experiment only been temporary arrested, and awaits but a fitting soil to wake forth fructify and flourish with increased vigour. Now that we believe this is not the case and that Carbolic acid posesses the power of eradicating and completely curing these diseases the following we trust will show.

Let us in the first place take Favus a disease due to the presence of a fungus Anchorion Schonleini. It is well known that this disease attacks not only the head though that may be its site of election, but also the integument of any part of the body covered with hair, and even the nails. Speaking of this disease Dr. McCall anderson says, "The patient urged by the itching, scratch their head, by which means portions of the crusts are carried away beneath the nails, and on scratching some part of the body afterwards the the Spores are inoculated and give rise to the disease in those parts". While we most heartily concur with this having seen the disease then propagated we have found that if any diseased surface on which this fungus matter is flourishing be treated with Carbolic acid that the tendency of the disease to spread by inoculation from the part so treated is indeed very small. In support of this let us cite the following cases. In ten patients, children affected with parts of the head, I made the following experiments. I took some of the fungus matter

Parasitic affection of the Skin by J. McCall anderson M.D. Page 13 Ed. of 1861.

matter from the scabs and caused it to be inoculated on other parts of the integuments, the disease invariably produced itself on the inoculated part. I then caused the Scab to be saturated with Carbolic acid and then repeated the experiment, and only in one case was the disease produced, and this probably was owing to the lancet used for inoculation not being also washed with the acid. I again removed the Scabs after the usual method recommended and again found inoculation Succed, but after brushing the diseased part with a strong solution of Carbolic acid, and then inoculating in the same manner, as before the application of the acid, the disease failed to make its appearance.

In this disease then Carbolic acid has seemed to me to fulfil the office of an important therapeutic agent in the destruction of favus fungi. In virtue of its chemical and physical properties allowing it to mix and dissolve in oil, Glycerine, alcohol, and water it is easily managed and can be wrought into many formulas for application. Its power of destroying smell comes well to the front in this complaint, when in virtue of its antiputrescent property it destroys the mice-like smell which accompanys this disease, and again its property of anaesthesia calms the local irritation which is such an annoying symptom to the patient. Its escharotic and stimulant power destroys any exudative matter and binds up the congested capillaries around the hair follicles, and lastly its power of destroying the lower forms of life seems to remove the cause of this disease.

It is now an accepted fact that the various local manifestations of ringworm are due to the presence of the same kind of parasitic. I have made experiments in this disease akin to those I have enumerated in favus and have found results similar to those already mentioned when referring to favus matter, and instead of as formerly following the method recommended in some of the text books on disease of the skin, performing depilation and applying iodine, blistering fluid or Mercuric preparations, I merely brush the surface with Carbolic acid. It seems to answer the purpose well of eradicating the cause of this disease. It is preferable to Mercury inasmuch as it is not so so liable to produce constitutional manifestations. It is not so painful in its application as blistering fluid, and it does not produce the unsightly tatooing discolouration of iodine. Though these will always act as a restraint to us in applying them on exposed surfaces of our patients

patients, it would be unworthy of us in acting for the common good thus alone to withhold them, but when it seems to us that this agent promises to afford all the good with none of the resulting evil of the others it is surely our duty to welcome it.

In Aphtha the topical application of Carbolic acid has seemd to me to be well worthy of a trial. The Glycerinum acidi Carbolici diluted and painted on the diseased surface will often after one or two applications completely remove the disease. In Children when their constitution is in a low state of health and this comes on in combination with flatulent dyspepsia a drop of Carbolic acid in milk and given in divided doses will go far to mitigate the complaint. It will however be found sometimes necessary to combine it with some bracing tonic such as quinine. In Aphtha and Marasmus, Carbolic acid will remove the disease only temporary. I have on several occasions used it combined with the bilorate of soda in this disease and although I know well the power possessed by this salt in the removal of this disease in almost all its stages, I am very much inclined to think that Carbolic acid in combination with it materially enhances its value as a therapeutic agent.

In vindication of this let me cite the following. In a married patient of mine, who died here (Dumbarton) in January 1874, from phthisis pulmonalis, I often toward the termination of her disease used the bilorate of soda for the purpose of removing the Aphtha from her mouth, I thought that a combination of the Carbolic and it might be more useful and accordingly got the patient to allow me to paint the one side of the mouth with this combination combined with glycerine, while I painted the opposite side of the mouth with only the bilorate of soda and glycerine, and I almost invariably found that the parts treated with the Carbolates were much sooner free from the Aphthas specks.

In pityriasis versicolor I have used Carbolic acid freely and have found it efficacious in removing the disease. In an old woman a pauper on my list while at Tarbolton (Ayrshire) 1874, I made the following trial of the power of Carbolic acid in this complaint. Her abdomen was almost literally covered with this disease. I used a solution of the perchloride of mercury and rubbed it on part of the abdomen, while I at the same time used a solution of Carbolic acid on another part of the diseased surface, I found that they both acted much similar in regard to the time

time requisite for producing an impression on the complaint, and that they both removed it.

Anderson on Eczema 3 Ed. Page 106.

In eczematous affections of the Skin, Dr. M'Call Anderson recommends internal administration of Carbolic acid, He prescribes it during the scaly stage of eczema and considers that a convenient vehicle for its administration is to be found in a pill mass or in a mixture with glycerine or water, "

Page 133

when discussing on the topical application in eczema the same author says, "It is only recently that Carbolic acid has been employed in the treatment of disease, and indeed now it is used principally as a disinfectant. There can be no doubt, however, that it possesses many valuable properties, and that it is destined ere long to play a much more important part in therapeutics." I have had many proofs of its value in Skin diseases and amongst others in the treatment of eczema, as an external application it is best to use it in the form of Solution as in the appended formula,

Acidi Carbolici Cryst	℥ ii
Glycerina	℥ i
Spt Vini Rect	℥ v
Aq Rosa	m l solve

Sponge the parts morning and when the itching is complained of.

The Strength of the mixture must depend upon the degree of chronicity of the Skin disease. It removes at once the fetid odour which often exhales from eczematous surfaces, counteracts the itching, and heals up the excoriations and ulcerations with remarkable rapidity. I have seen cases in which it removed the eruption completely within a week. If I might compare the value of Carbolic acid, of which I have had a comparatively short experience, with that of the tarry preparations with the virtue of which I have long been intimately acquainted I should be inclined to say that Carbolic acid is decidedly inferior to the latter on the whole, but that it sometimes succeeds when the tarry preparations fail, and that it is also sometimes to be preferred owing to its agreeable, solution being quite colourless when fresh and exhaling an odour which to most persons is neither pungent nor disagreeable. We for our own part most willingly concur with the idea there expressed by Dr. Anderson, having on more than one occasion met with obstinate cases of eczema where the tarry preparations were used till we had almost lost all faith in their efficacy; and in one case even Vaccination was resorted to, in the hope of [illegible] has been recommended altering the condition of system producing the eczema

[illegible], and when this failed we took as an almost last resort Carbolic acid and applied it not externally but also administred it in combination with other drugs (Syrupi Ferri Phosph Co.) which the children had previously been taking, and we found it act with almost the force of a charm, what we had been dealing at with tarry solutions for months with but little, if any apparent benefit, began to yield to the Carbolic applications in as few days. It has been argued against the use of Carbolic acid that both its eternal application and internal administration, even in small quantities may produce serious symptoms, some being much more readily affected than others, the symptoms being vomiting, giddiness delirium, coma or collapse with weak pulse and cold sweat &c, It may be that there are people, or states of the system in which this Carbolic acid idiosyncracy may exist, but we are inclined to believe the occurrence of such a state to be extremely rare, for in the Surgical wards of hospitals where the acid is very freely used such a thing is all but unheard of, Moreover in some cases where large surfaces of skin have been covered with eczema and which we have caused to be dressed with Carbolic acid lotions such symptoms never once showed themselves. The topical use and internal administration of Carbolic acid will sometimes produce discolouration of the urine, causing it to vary in colour from a dark to a lighter brown. Ferries suggested that this was owing to its becoming oxidized before absorption. Carbolic acid administered by the stomach at times prevents in a manner the decomposition of the urine, and at times proves useful in urinary diseases. Sir Henry Thomson in his works on ~~xxxxxxxxxx~~ diseases of the urinary organs recommends carbolic acid in Cystitis and Prostatitis. When the urine is offensive he uses injections of Carbolic acid into the bladder in the proportion of from two to four minims to four ounces of water, Dr Sansom in his investigations into the urine, proved that Sulpho-Carbolate prevented fermentations in different degrees, Sulpho-Carbolate of Soda being most efficient, then follow in order Salts of Magnesium, Potassium ammonium. These salts administered to animals prevented any decomposition of urine, and although the salts could not be extracted from the urinary excretions, still after the urine had been collected and preserved for six months it had not decomposed. Carbolic acid has seemed to me a valuable therapeutic agent in the various forms of prurigo. In prurigo Ani and prurigo Vaginæ I have found it do good service, when other agents have failed. In prurigo Ani depending on piles the addition of one drachm of the

IV ED.
Page 333.

Prurigo

the acid to two ounces of the Gall ointment of the BP will often quiet the irritations. In cases where the prurigo has depended upon the presence of worms in the rectum a clyster containing the acid has often proved extremely useful. At times when the itching has depended upon no very apparent cause, I have found it relieved by saturating oakum in a weak solution of Carbolic acid and then pushing small plugs of it into the rectum. In prurigo of the Vagina and Vulva accompanied with fetid discharge and Excoriations Sponging the Vulva with Carbolic acid lotion will often allay the irritation and allow the woman to get a nights rest.

Cancer of the Uterus

In Cancer of the os and cervix uteri Carbolic acid applied topically has seemed to me not only to be of use in keeping down the fetid smell and quieting the irritation but also in virtue of its escharotic power has stopped the haemorrhage. During 1876. I had at one time a fair opportunity of testing the power of Carbolic acid in this complaint, having had at the same time three cases of Cancer of the os and cervix uteri under my care. In all of them the discharge produced almost intolerable itching keeping the poor sufferers nearly devoid of sleep. They had all injections of Boracic acid, this having been recommended to one of them by a celebrated Edinburgh gynaecologist, for the purpose of quieting the irritation and keeping down the smell, I however found it signally failed to give any relief to the itching, and I then replaced it by Carbolic acid which calmed the irritation and allowed what previously was unbearable to at least be tolerated. In one of these patients when on one occasion I was summoned to stop haemorrhage from her womb. I pushed a small plug of Sponge saturated with the acid against the neck of the womb, and had the satisfaction of finding the bleeding very soon cease. How do I think that this cessation of the haemorrhage was due entirely to mechanical pressure, for the woman complained of burning pain when the plug touched the womb, and this may lead us to infer that the styptic or escharotic power of the acid aided in stopping it. Writing on disease of the uterus Dr Lloyd Roberts of Manchester says "In ulcer of the os and cervix uteri I invariably use the pure acid. In simple ulceration of the os a free application drawn over the surface twice a week is sufficient. A capital plan for maintaining the fluidity of the acid devised by Mr Weir of Dublin and recommended by Dr Roe, is to add a few grains of Camphor to the acid. When it is necessary to apply the acid to the interior of the cervical canal of the uterus, I use a charged

charged camel hair pencil, or a gum elastic catheter having previously removed with a piece of lint or injection of water any mucus likely to impede its proper application. In applying it to the interior of the uterus it is very important to have the uterine canal freely open, which however with the exception mentioned is generally the case. When it is not so, recourse must be had to dilatation with a sponge tent so that the superfluous injection may pass freely out; neglect of this precaution producing much uterine colic rendering the woman liable to metritis. Care should also be taken to ascertain the direction of the uterus by the sound, as in cases of retroflection any of the injections passing beyond the canal portion of the organ and retained there, would be certain to produce dangerous consequences. When injected into the uterine cavity, the acid should be diluted with glycerine and water, commencing with a weak solution and gradually increasing the strength as circumstances requires. I also use the acid dissolved as above freely as an ordinary injection in Vaginal leucorrhoea and uterine ulceration, and Cancer, and it will be found an excellent cleanser, healer, disinfectant, and allayer of pain." Assuming the correctness of these views, I feel warranted in repeating that Carbolic acid as a local application in uterine disease is especially useful, occupying as it does an eschortic power a position intermediate between the milder nitrate of Silver and the more powerful corrosive caustics potassa fusa, the mineral acids, acid nitrate of Mercury &c. more energetic than the first named salt, it is at the same time free from the dangers to neighbouring structures which attend the use of the more potent caustics. Although its action does not penetrate below the diseased surface it possesses in equal degree with the stronger caustics, the property of changing the vitality of the tissues, and produces rapid cicatrization, dissipates the inflammation and hypertrophy and relieves pain. By its disinfectant action it destroys the offensive odour of purulent discharges and acts beneficially upon the lax and discharging mucus membrane. Unlike most Caustics if applied only to the diseased surface it does not cause pain. In flatulent dyspepsia Ringer recommends the administration of Carbolic acid in the form of the Sulpho Carbolate of Soda, and maintains that this will sometimes afford relief when all other things fail. If the flatulence occur before the meal he administers it before the taking of food, and if after meal he recommends it to be taken on leaving table. While we willingly add our quota to the support of this we at the same time have found more benefit from

Handbook of Therapeutics by Sydney Ringer IV. ED. P. 301

from combining the Carbolic acid with some of the vegetable bitters, and are frequently in the habit of using it in some bitter extract in the form of pills, or suspended in glycerine and administered in some bitter infusion. In that form of flatulance where one would almost suppose that the gases were secreted from the blood (but which are most probably developed from ingesta which has not been properly digested) filling the greater part of the stomach and intestines, the administration of Carbolic acid with Nux vomica and quinine has often in my practice afforded relief much sooner than the Sulpho Carbolate of Soda. I have found some twenty or more cases of this in pauper patients, when the system has gotten into a low state from the want of proper food and when the intestines were in a state of atony, and readily became over distended. In such cases I have found that the addition of one or two minums of Carbolic acid to Nux vomica and quinine have done good service. In ozena and purulent discharges from the nose the application of a weak solution of Carbolic acid will often prove efficacious. It will lessen the disagreeable smell which constantly annoys the patient, and will promote healing action in any abrasion present in the nasal cavity. In those cases depending upon tertiary syphilis, I have used with benefit an ointment composed of iodide of Potass and Carbolic acid, and if the disease is Secondary instead of the Potass salts, mercury will be advantageous. In one case of Cancer of the Septum of the nose a wash composed principally of Carbolic acid was often used and always, as the patient said with considerable benefit. It allowed him more freedom of breathing and kept down the constant disagreeable fetor which so much annoyed him. I also am much inclined to think it aided materially in limiting the local manifestations of the disease. for although the submaxillary and cervical gland were from the first, and still remain much enlarged the extent of the disease in the nasal cavity has not increased and although now after a lapse of one and a half years the patient is sinking from pulmonary phthisis she complains nothing of any disagreeable feeling in the nose. In toothache a piece of Cotton Wool, saturated with Carbolic acid and placed in the hollow of the decayed tooth will often arrest the disease. In caries of the teeth and abrasion of the alveolar with suppuration of the alveolar periosteum washes of Carbolic acid have been recommended. In diseases of the throat accompanied with ulceration and pealing

Jones System of Dental Surgery II Ed. 1843

Dr. Wilson

smell gargles containing Carbolic acid will be found very useful. not only will they remove the smell but they will promote healing in the ulcerated part. It has appeared to us that in dealing with the local manifestations of diphtheria, Carbolic acid furnishes us with an agent of no small therapeutic Value. we have used this in some fifteen cases of diphtheria and as success has attended our endeavours we venture to offer the following summary. In the first place let us quote the now accepted pathology of the disease.

Z f Biol 1868 III P. 341

Buhl maintains that a fungus constantly occurs in diphtheria which grows through the epithelial layer of the mucous membrane. He, however leaves undecided whether the fungus is peculiar and necessary to diphtheria, or whether it is accidental.

Nassiloff holds, the development of a fungus to be primary in diphtheria and to be the cause of the necrosis. He says that the fungi appear on the bordres of the changed parts of the epithelium, even when no membrane has yet formed, they penetrate deply into the tissues, following the passages of the juices and lymphatics.

Zur Kenntn 1872.

According to Eberth fungi settles first in diphtheria or the corresponding mucous membrane, thence pass into the deper tissues and produce the constitutional phenomena.

Other observers deny the necessity of the presence of the fungi in diphtheria and maintain that the local manifestations of this disease in the throat is only a necrosis of tissue, and that if fungi are found, they are of themselves not the cause of the disease but only come there accidently. While we for the present will not venture to cope with the one, or to vindicate the enunciations of the other, we beg to suggest that Carbolic acid will aid materially in the treatment of this disease, be it due to either cause, for if we recollect the experiments of Parkes which demonstrate its power in arresting the growth of fungi, and our own case of Favus and Ringworm where we have reason to consider that its continued application for a time in sufficient quantity destroyed them we are not without hope that it by virtue of this property, will aid us considerably in the treatment of diphtheria. If however the disease be not produced by the fungus so often present, but is due to a necrosis of tissue, the Carbolic acid still aids us, for we know the power it has of preventing putrefaction. a process which is almost always present in necrosis. Now, what we claim for this Carbolic acid

acid treatment of diphtheria is the following.
I That it prevents the putridity which so frequently manifests itself in this disease from appearing.
II That by virtue of its anaesthetic property when applied topically it diminishes very considerably the pain complained off in the throat, and allows the patient the better to swallow.
III That by virtue of its escharotic and antiseptic power it renders any detached pieces of diphtheritic membranes less liable to propagate the disease from the throat to other parts of the alimentary canal of conveyed either by the food or drink.
IV That while it acts as an escharotic it does not penetrate the deeper tissues like some of the other more potent caustics and is not so apt to be followed by ulcerated surface of the throat or extension of the membranes surface. I have been in the habit of touching membranous surfaces with the pure acid once or twice, then painting the adjacent tissue with a combination of equal parts of carbolic acid and glycerine. This I find produces an escharotic action on the parts the pain is not great and is soon followed by a feeling of numbness. In adults I have been in the habit of doing the above and then using a spray of carbolic acid and water in the proportion of one of the acid to one hundred of water, and recommend the application of this often; and in other cases where we cannot well get the spray apparatus introduced I have used inhalations of steam, medicated with carbolic acid. In the cases so treated I have found that the antiputrescent power of the acid so used was soon manifest. The putrid smell of the expired air soon disappearing and in most cases being somewell marked by the nurse (mostly the mothers) in attendance.

Watson Practice of Physic

In this disease Sir Thomas Watson, Trousseau &c assert that there is a tendency for the false membrane to extend not only down the oesophagus through the rest of the alimentary canal but also up the posterior naris and Trousseau also hold its very strong tendency to pass down into the pharynx, if then we have a fungus or a decomposing and necrosed membrane at the entrance of the respiratory track, need we wonder that toxic symptoms so often present themselves, when we recollect the poisonous nature of the gases which eminate from dead, and decomposing animal or vegetable matter, we can well understand that if such gases are respired and enter the general system, that poisonous effects will soon

Trousseau Clinical Lectures

soon follow; here then in this complaint we must probably have such phenomena manifesting themselves at the very entrance of the respiratory apparatus, so that we have constantly during the whole course of the disease a tendency for the system to get these poisoned. If then we have an agent endowed with the property of preventing the development of putridity at the site of the local manifestations of the disease it must form a valuable auxilliary in the treatment of it and such do we venture to claim for Carbolic acid.

II That by virtue of its anæsthetic property it demunishes the pain of the throat and allow nourishment better to be swallowed.

Dr Andrew H. Smith in the New York Medical Journal Shews the power of anæsthesia possessed by Carbolic acid, and found that it produced a burning pain followed by numbness and whitening, followed by Shrivelling and shedding of the skin, so as to allow him to make incisions into it without even feeling the knife, and after the lapse of three hours he put a needle into the skin, and followed this by a blister to the Carbolised surface without the production of pain. Now we are of opinion that the same thing occurs in mucous membranes after the application of Carbolic acid of this strenght to them, we have seen the mucous membranes whiten and shrivel and heard complaint of after that. and in those cases where we have used it in diphtheria we have found such phenomena manifest themselves. In one case, that of a farm labourers wife residing at Townend Dumbarton, in the summer of 1873 we were much struck with the anæsthetic phenomena that this woman previous to the application of Carbolic acid to the throat, could not swallow even fluids without incurring almost agonising pain we had the throat well painted with the solution of Carbolic acid and we shortly found the woman tell us that a numbness was now present in the throat. We then advised her to try and swallow a little, which we found she could do very much better.

III Under this let me mention that I took a Diphtheritic membrane from a child, who died eventually of diphtheria at No 10 Bridge St Dumbarton, in 1874, and I put pieces of the membrane on the abraided part of the mucous membranes of several Kittens mouths and I almost invariably found the diphtheritic membrane shew itself in the animals pharynx. In

↑ He painted on his forearm a spot an inch in diamiter with 85 per. ct. Solution of Carbolic acid and ↑

In other two cases where I have saturated the membrane in a strong solution of Carbolic acid and tried the same thing it failed; and in a third case where we gave the diphtheritic membrane saturated with carbolic acid and mixed with flesh meat to a cat it produced no symptoms of any kind.

IV In those cases to which we have applied it we have not found it penetrate the deeper tissues, nor been followed by local ulceration; we have for the most part seen its limiting power well marked, and in support of this let me quote the two following cases. In a lad of twelve years named Buchanan, residing at Cardross, I was called in casually one evening, returning home and found him suffering under the ealier manifestations of diphtheria, My first impression on seeing him was to cauterise the throat well with argt nitras this I did and left him with other orders to the mother or nurse. I saw him next day and found that around the site of the cauterized place the membranes had extended and also on the opposite side of the throat. I then used the Carbolic acid and followed this by the application of the Carbolate of Glycerine, and much to my satisfaction found that it seemed to have the power of arresting the local appearance of the Disease.

In a child residing at 2 Bridge St. Dumbarton who had an attack of the same disease in the month of December 184[illegible] I followed the same method of treatment, and had to return to the Carbolic acid, and found phenomena manifesting themselves.

This and much more might be written concerning the therapeutic properties of Carbolic acid, we however trust that sufficient has been done to prove what we at first claimed for it, and we trust that we have adduced evidence to shew that besides its antiseptic quality, it also possesses valuable properties which will serve us well in the treatment of many parasitic diseases, and that it offers to us an agent of no small importance in the treatment of diphtheria.

J. M'Lachlan M.D.

Rosebank Place
Dumbarton
29th March 1873